The Effects of Need-Based Financial Aid on Employment, Earnings, and Receipt of Public Benefits

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Introduction

• Rapidly increasing costs of postsecondary education
  • Public, 4-year institutions (constant 2017-18 dollars)
    • 1999-00: $12,127
    • 2017-18: $20,050
  • Private, nonprofit, 4-year institutions (constant 2017-18 dollars)
    • 1999-00: $31,118
    • 2017-18: $46,150

• How can we provide equitable access in the face of high and ever-increasing costs?
  • Need-based aid one arrow in the quiver
Introduction

• Large research base on effects of need-based aid on postsecondary access, persistence, and completion

• Also affect labor market behavior?
  • During period of postsecondary enrollment
  • During period following postsecondary exit

• Much smaller evidence base on labor market effects
  • Pell Grant- reallocates effort from labor to coursework (Park & Scott-Clayton 2018)
  • Cal Grant- increased earnings 10 to 14 years after aid award? (Bettinger et al. 2019)
  • FFWS- decreased self-reported employment by 6 pp year after aid offer (Broton, Goldrick-Rab, & Benson 2016)
Our Paper

- Estimates causal effect of need-based aid offer on:
  - Employment & earnings in Wisconsin
  - Participation in public assistance programs in WI
    - SNAP, TANF, UI

- Need-based aid source: Fund for Wisconsin Scholars

- Data: Several sets of Wisconsin administrative records

- Design: Exploit random assignment of aid offer

- Time span: Up to 8 years after receipt of randomized aid offer
The Fund for Wisconsin Scholars

• Established in 2007 with $167 million founding gift

• Goal of increasing postsecondary persistence & completion among economically-disadvantaged students in WI

• Works to achieve goal by providing need-based grants
  • First grants awarded in Fall 2008
  • During period we study, student was eligible if:
    • Graduated from a public WI high school;
    • Less than 21 years old;
    • Pell eligible;
    • Pursuing a first degree at UW-System or WTCS school
      • UW-System: 13 four-year universities; 13 two-year colleges
      • WTCS: 16 technical colleges
FFWS Administration

• Students do not directly apply for FFWS grant

• Annually, each institution sends a list of newly eligible students to Wisconsin Higher Educational Aids Board (HEAB)
  • Students at four- and two-year institutions combined into separate pools
  • Randomization within each pool
    • Early in fall semester—students already enrolled
    • Target of approximately 500 award acceptances in each pool
  • Selected students receive an award letter they must sign and return to FFWS to access award
FFWS Administration

- Grant details
  - Can receive grant up to 10 semesters
    - Transfer students maintain eligibility
  - Students at four-year institutions
    - $3,500 annually through 2014-15
    - $4,000 annually from 2015-16 forward
  - Students at two-year institutions
    - $1,800 annually
    - WTCS students no longer eligible beginning Fall 2016; UW-College students no longer eligible beginning Fall 2017
      - Existing award recipients remain grant-eligible

- “Last dollar” aid program
  - Only applied after all other forms of grant/scholarship aid are exhausted
## Number of FFWS Recipients

<table>
<thead>
<tr>
<th>Cohort</th>
<th>4-Year Institution</th>
<th>2-Year Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FFWS Offer</td>
<td>No Offer</td>
</tr>
<tr>
<td>2009-10</td>
<td>500</td>
<td>3,635</td>
</tr>
<tr>
<td>2010-11</td>
<td>550</td>
<td>4,521</td>
</tr>
<tr>
<td>2011-12</td>
<td>621</td>
<td>4,204</td>
</tr>
<tr>
<td>2012-13</td>
<td>625</td>
<td>3,499</td>
</tr>
<tr>
<td>2013-14</td>
<td>600</td>
<td>3,718</td>
</tr>
<tr>
<td>2014-15</td>
<td>557</td>
<td>3,588</td>
</tr>
<tr>
<td>2015-16</td>
<td>540</td>
<td>3,387</td>
</tr>
<tr>
<td>2016-17</td>
<td>575</td>
<td>3,101</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,568</strong></td>
<td><strong>29,653</strong></td>
</tr>
</tbody>
</table>
Data

- Five sets of administrative records
  1. HEAB records
     • Annual set of grant-eligible students—indicator for offer receipt
  2. DPI records
     • National Student Clearinghouse records—enrollment & completion
     • Info from high school years
  3. UW-System records
     • Student postsecondary outcomes at UW-System schools
       • Enrollment, graduation, credits, financial aid, major, GPA
  4. Unemployment Insurance records
     • Quarterly earnings in WI
  5. CARES records via the MSPF
     • Participation in public assistance programs

- Dataset: Annual information for 54,004 FFWS-eligible students
  • Spans 2009 to 2018
## Baseline Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>4-Year Institution</th>
<th>2-Year Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FFWS Offer</td>
<td>No Offer</td>
</tr>
<tr>
<td>Female</td>
<td>59.3***</td>
<td>56.6</td>
</tr>
<tr>
<td>White</td>
<td>76.7</td>
<td>76.7</td>
</tr>
<tr>
<td>Underrep. race</td>
<td>15.2</td>
<td>14.8</td>
</tr>
<tr>
<td>Other race</td>
<td>8.1</td>
<td>8.4</td>
</tr>
<tr>
<td>Ever ELL</td>
<td>8.8</td>
<td>8.6</td>
</tr>
<tr>
<td>SNAP</td>
<td>17.1</td>
<td>16.8</td>
</tr>
<tr>
<td>N</td>
<td>3,993</td>
<td>26,552</td>
</tr>
</tbody>
</table>

Asterisks indicate difference from No Offer group mean at: ***p<0.01, **p<0.05, *p<0.10
Analytic Strategy

- Registered pre-analysis plan with AEA RCT Registry
- Estimate effect of the grant offer—ITT parameter—with following model:
  \[ Y_{ijt} = \alpha + \sum_{t=1}^{8} \gamma_t F_{ij} + \tau_j + \psi_t + \varepsilon_{ijt} \]
  - \( i, j, t \) index students, cohorts, and post-randomization year
  - \( Y \) is the outcome of interest
  - \( \alpha \) is a constant
  - \( F \) is an indicator for receipt of FFWS grant offer
  - \( \tau_j \) is a cohort fixed effect
  - \( \psi_t \) is a fixed effect for post-randomization year
  - \( \varepsilon \) is the error term
- Estimate via OLS; cluster SEs by student
  - Estimate separately for 4-year & 2-year samples
Outcomes

• Annual employment in WI
• Annual earnings in WI
• Public program participation
  • SNAP, TANF, UI
    • Receipt & dollar amount of benefits

• Records from only WI suboptimal
  • Still provides relevant information to policymakers
  • Additional work to gain insight into overall employment and earnings effects
## Employment Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Control Group Mean</th>
<th>Coef. (S.E.)</th>
<th>Control Group Mean</th>
<th>Coef. (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>0.812</td>
<td>-0.023*** (0.006)</td>
<td>0.877</td>
<td>-0.004 (0.006)</td>
</tr>
<tr>
<td>Year 2</td>
<td>0.826</td>
<td>-0.021*** (0.007)</td>
<td>0.892</td>
<td>-0.003 (0.005)</td>
</tr>
<tr>
<td>Year 3</td>
<td>0.811</td>
<td>-0.007 (0.007)</td>
<td>0.876</td>
<td>0.001 (0.006)</td>
</tr>
<tr>
<td>Year 4</td>
<td>0.819</td>
<td>-0.004 (0.008)</td>
<td>0.862</td>
<td>0.002 (0.007)</td>
</tr>
<tr>
<td>Year 5</td>
<td>0.812</td>
<td>-0.007 (0.009)</td>
<td>0.854</td>
<td>-0.004 (0.008)</td>
</tr>
<tr>
<td>Year 6</td>
<td>0.778</td>
<td>-0.027** (0.011)</td>
<td>0.841</td>
<td>-0.001 (0.010)</td>
</tr>
<tr>
<td>Year 7</td>
<td>0.750</td>
<td>-0.031** (0.015)</td>
<td>0.823</td>
<td>0.002 (0.013)</td>
</tr>
<tr>
<td>Year 8</td>
<td>0.729</td>
<td>-0.0299 (0.022)</td>
<td>0.816</td>
<td>-0.033* (0.020)</td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.10
## Earnings Results

<table>
<thead>
<tr>
<th>Year</th>
<th>4-Year Institution</th>
<th></th>
<th>2-Year Institution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control Group Mean</td>
<td>Coef. (S.E.)</td>
<td>Control Group Mean</td>
<td>Coef. (S.E.)</td>
</tr>
<tr>
<td>Year 1</td>
<td>$3,884</td>
<td>-278*** (58.5)</td>
<td>$6,655</td>
<td>-123 (91.6)</td>
</tr>
<tr>
<td>Year 2</td>
<td>$5,798</td>
<td>-524*** (93.9)</td>
<td>$9,883</td>
<td>-53 (140.6)</td>
</tr>
<tr>
<td>Year 3</td>
<td>$7,171</td>
<td>-377*** (131.8)</td>
<td>$12,463</td>
<td>89 (193.7)</td>
</tr>
<tr>
<td>Year 4</td>
<td>$8,908</td>
<td>-285 (174.8)</td>
<td>$14,438</td>
<td>253 (246.3)</td>
</tr>
<tr>
<td>Year 5</td>
<td>$13,472</td>
<td>-651** (282.7)</td>
<td>$16,788</td>
<td>339 (316.9)</td>
</tr>
<tr>
<td>Year 6</td>
<td>$18,008</td>
<td>-869** (421.7)</td>
<td>$19,262</td>
<td>166 (413.4)</td>
</tr>
<tr>
<td>Year 7</td>
<td>$20,406</td>
<td>-1,145* (595.9)</td>
<td>$21,148</td>
<td>-269 (550.7)</td>
</tr>
<tr>
<td>Year 8</td>
<td>$21,434</td>
<td>-1,646* (941.9)</td>
<td>$22,052</td>
<td>-995 (859.4)</td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.10
Further Analysis

- Additional insight into employment and earnings effects for students at 4-year schools
  - Treatment-on-the-treated estimates
  - In-school employment and earnings declines accompanied by improved academic performance
- Potential mechanisms for negative effects in post-college years
  - Reduced debt burden provides degree of financial flexibility?
  - Offer-induced outstate migration?
    - Asymmetric outstate migration
- Bounding effect of grant offer on total earnings
  - Not just in-state earnings
Summary

• Need-based aid offer reduces in-state employment and, especially, earnings for students at 4-year schools
  • During in-college & post-college time periods
    • In-college reductions accompanied by evidence of improved academic performance
  • No effects for students at 2-year institutions
    • Some evidence of difference between WTCS and UW-Colleges

• Potential mechanisms
  • Offer-induced out-state migration
    • Unlikely to explain entire effect
  • Reduced loan debt provides labor market flexibility?
  • Other possibilities

• No systematic effects on SNAP, TANF, or UI receipt in WI
  • Either 2-year or 4-year
Discussion

• Highlights a tension in program design for policymakers
  • Welfare of aid recipient vs. taxpayers
    • FFWS philanthropically funded
  • RI & NY impose residency requirements on aid
  • Other states have no such requirement

• Estimates only capture early portion of students’ careers
  • Different long-run dynamics?
    • Salary trajectories differ?
  • Future work

• Other important dimensions not captured at all
Thank you!

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